

# Notice of Allowability

Application No.

10/707,535

Examiner

Krishnan S. Menon

Applicant(s)

KNEEZEL, GARY A.

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Appeal Brief of 10/23/06.
2. ☒ The allowed claim(s) is/are 1-8, 26- 36, 40 and 41; renumbered 1-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Backenstose on 11/9/06.

The application has been amended as follows:

Specification: delete the extraneous letter "F" appearing after 'Fig. 4;' from the end of paragraph [0023].

Claim Amendments: An amended claims list follows, starting on a fresh page below. Previously withdrawn Claims 6-8 and 31-36 which depend from the allowable independent claims were rejoined. All other Claims previously withdrawn from consideration are cancelled.

***Amended Claims List***

1. (Currently Amended) An internal fluid filter, comprising:
  - a first substrate;
  - a second substrate;
  - a plurality of first and second passages etched by orientation-dependent chemical etching into the first substrate; and
  - a plurality of third passages etched by orientation-dependent chemical etching into one of the first substrate and the second substrate, each third passage extending between and fluidly connected to one of the first passages and one of the second passages, wherein fluid can flow into the one of the first and second passages, from the one of the first and second passages into the third passages, and from the third passages into the other of the first and second passages, such that particles having a size greater than that which can pass through the third passages are filtered from the fluid.
2. (Original) The internal fluid filter of claim 1, further comprising:
  - a fourth passage fluidly connected to the plurality of first passages; and
  - a fifth passage fluidly connected to the plurality of second passages.
3. (Original) The internal fluid filter of claim 2, wherein a microfluidic device is connected to one of the fourth and fifth passages.

Art Unit: 1723

4. (Original) The internal fluid filter of claim 2, wherein a fluid source is connected to one of the fourth and fifth passages.

5. (Original) A fluid system comprising:  
a fluid source;  
a fluid sink and  
the internal fluid filter of claim 2, wherein the fluid source is connected to one of the fourth and fifth passages and the fluid sink is connected to the other of the fourth and fifth passages.

6. (Rejoined) The internal filter of claim 1, further comprising:  
a plurality of fourth passages, each fourth passage fluidly connected to at least one of the plurality of first passages; and  
a plurality of fifth passages, each fifth passage fluidly connected to at least one of the second passages.

7. (Rejoined) The internal filter of claim 1, further comprising:  
at least one fourth passage, each fourth passage fluidly connected to at least one of a first subset of the first passages;  
at least one fifth passage, each fifth passage fluidly connected to at least one of a second subset of the first passages;

wherein at least one second passage is fluidly connected by the third passages to at least one of the first subset of the first passages and at least one of the second subset of first passages.

8. (Rejoined) The internal filter of claim 7, wherein at least one second passage that is fluidly connected to at least one of the first subset of the first passages and at least one of the second subset of first passages comprises:

a first portion fluidly connected to the at least one of the first subset of passages; and

a second portion fluidly connected to the at least one of the second subset of passages;

wherein a microfluidic device is connected to the first and second portions of that second passage.

9 - 25. (Cancelled)

26. (Currently Amended) An internal fluid filter, comprising:

at least one first passage;

at least one second passage;

a plurality of third passages, each third passage connected to one of the at least one first passage;

a plurality of fourth passages, each fourth passage connected to one of the at least one second passage; and

a plurality of fifth passages, each fifth passage formed by orientation-dependent chemical etching and extending between and fluidly connected to one of the third passages and one of the fourth passages, wherein fluid can flow into one of the first and second passages, from the one of the first and second passages into one of the plurality of third passages and the plurality of fourth passages, respectively, from the one of the plurality of third passages and the plurality of fourth passages into the plurality of fifth passages, from the fifth passages into the other of the plurality of third passages and the plurality of fourth passages, and from the one of the plurality of third passages and the plurality of fourth passages into the other of the first and second passages, such that particles having a size greater than that which can pass through the fifth passages are filtered from the fluid.

27. (Original) The internal fluid filter of claim 26, wherein at least one microfluidic device is connected to at least one of the at least one first passage or to at least one of the at least one second passage.

28. (Original) The internal fluid filter of claim 26, wherein at least one fluid source is connected to at least one of the at least one first passage or to at least one of the at least one second passage.

29. (Original) A fluid system comprising:

at least one fluid source;

at least one fluid sink; and

the internal fluid filter of claim 26, wherein the at least one fluid source is connected to at least one of the at least one first passage or to at least one of the at least one second passage and the at least one fluid sink is connected to the other of at least one of the at least one first passage or to at least one of the at least one second passage.

30. (Original) The fluid system of claim 29, wherein at least one of the at least one fluid source and the at least one fluid sink is a microfluidic device.

31. (Rejoined) The internal filter of claim 26, wherein:

the at least one first passage comprises a plurality of first passages, each first passage fluidly connected to at least one of the plurality of third passages; and

the at least one second passage comprises a plurality of second passages, each second passage fluidly connected to at least one of the fourth passages.

32. (Rejoined) The internal filter of claim 31, wherein each of the plurality of first passages is connected to a different fluid source.

33. (Rejoined) The internal filter of claim 32, wherein each of the plurality of second passages is connected to a different fluid sink.

34. (Rejoined) The internal filter of claim 32, wherein each of the plurality of second passages is connected to a single fluid sink.

35. (Rejoined) The internal filter of claim 31, wherein each of the plurality of second passages is connected to a different fluid sink.

Art Unit: 1723

36. (Rejoined) The internal filter of claim 35, wherein each of the plurality of first passages is connected to a single fluid source.

37-39. (Cancelled)

40. (Previously Presented) The internal fluid filter of claim 1, wherein the plurality of third passages are fluidically parallel to one another.

41. (Previously Presented) The internal fluid filter of claim 26, wherein the plurality of third passages are fluidically parallel to one another.



***Allowable Subject Matter***

Claims 1-8, 26- 36, 40 and 41 are allowed.


The following is an examiner's statement of reasons for allowance: The etching process of 'orientation-dependent chemical etching' requires specific material compatible for the process and provide unique structure not taught by the closest prior art Goldsmith.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Krishnan S Menon  
Primary Examiner  
Art Unit 1723